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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,729	02/21/2002	Frederick Browne Gregg	64907_DIV	7503

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EXAMINER

KILKENNY, TODD J

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 12/19/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/079,729

Applicant(s)

GREGG ET AL.

Examiner

Todd J. Kilkenney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18 and 27-40 is/are rejected.
- 7) ☒ Claim(s) 19-26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Applicant is asked to review the entire specification for typographical errors. For example, should "portland cement" be amended to -- Portland cement -- (page 3, line 12)? Furthermore, provisional application 60/158,172 has a recognized filing date of October 7, 1999. Applicant is asked to amend the first sentence of the specification to acknowledge this date and further amend said first sentence to include the updated status of application 09/684,848, which is now U.S. 6,416,619.

Appropriate correction is required.

Drawings

2. The drawings are objected to because referring to FIG 17, should element 249' be amended to 249'', element 244' be 244'' and element 242' be 242''? A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. It is initially noted that the claim language directed to a "system" is recognized as defining an **apparatus**.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over King (US 5,002,620) in view of Urmston (US 4,124,699) and further in view of Mathieu (US 6,187,409).

Referring to Figures 4 – 6, in an alternative application, King discloses that lightweight concrete (recognized as aerated concrete) can be used to construct wall panels (60) that are lighter and less expensive than conventional drywall products. In a general description for making the wall panels, King suggests casting a large (8 ft. X 8 ft. X 4 ft) cube of aerated concrete. The cubes are then "sawn" into desired thickness at which point a fibrous mat (62) is applied as a face layer. Furthermore, an additional face layer (64, a decorative, acoustical or other desired finish) may be applied over the fibrous mat (Col. 4, line 50 – Col. 5, line 7). While generally teaching to make aerated concrete wall panels using an apparatus which comprises a mixer, at least one face layer and a former including a mold tray, and a divider for sawing a cast aerated concrete cube into desired thickness panels. King fails to positively suggest employing an autoclave to cast the molded block and also fails to suggest a cutter for cutting the already divided core panels with the face layers secured thereon.

As to the autoclave, it would have been obvious to one of ordinary skill in the art to use an autoclave to cure the concrete slab since autoclaves are commonly used in the art to cure concrete as taught by Urmston (Col. 3, lines 18-38).

As to providing a cutter downstream said former for cutting the core material and the at least one face layer secured thereto into a plurality of wallboard or backerboard sheets, King fails to provide any disclosure in regard to an apparatus that continuously secures the at least one layer onto the divided block panels and thereafter provides a cutter so as to effectively cut the panels and the secured face layer thereon in a continuous manner into desired lengths of wallboards. However, it is considered to be known to produce wallboards in a continuous manner and thereby apply a face layer from a face layer supply to cementitious cores, wherein after the core has been cured and the face layers are secured thereon, the core material is transversely cut to form appropriately sized wallboards, as evidenced for example by Mathieu (Col. 32, lines 4 – 14).

It would have been obvious to one of ordinary skill at the time of the invention to recognize the well known manufacturing benefits of continuous processing in the production of wallboards and therefore continuously secure a face layer from a face layer supply to a plurality of divided core panels of King, wherein after the cured panels have at least one face layer secured thereon to transversely cut said core layer and the at least one face layer thereon to form appropriately length wallboard so as to achieve a finished product comprising both the concrete core and the at least one face layer having the matched desired dimensions as is known in the art as suggested by Mathieu. It being further noted that Mathieu suggests cutting a cured panel having a face layer secured thereon.

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6. Claims 27 – 30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urmston (US 4,124,669) in view of King (US 5,002,620), Mathieu (US 6,187,409), Teare (US 4,298,413), Clear (4,203,788) and Emerson (US 1,439,954).

Urmston teaches an aerated concrete process wherein lightweight concrete units are produced from a mix including an aerated cementitious material by inserting the mix into a mould and allowing the mix to set into a block. Concrete units can be produced from said block by dividing the block into slices by multiple wires after the material has expanded and set but before it is cured (see Abstract; Col. 3, lines 17 – 38). Urmston however fails to suggest apparatus components for securing at least one secured face layer to the sliced aerated concrete building units in a continuous process to form a plurality of wallboards or backerboards.

As suggested by both King (see Col. 4, line 50 – Col. 5, line 8) and Mathieu (Col. 1, lines 1 – 26; Col. 17, line 66 – Col. 18, line 9) it is known in to produce wallboards or backerboards from aerated concrete.

Therefore, in view of the teachings to King, and Mathieu, it would have been obvious to one of ordinary skill in the art at the time of the invention that the broadly defined aerated concrete building units of Urmston could be combined with known apparatuses to form wallboard or backerboard since aerated concrete is known to be used to form wallboard or backerboard as evidenced by King and Mathieu, and wherein wallboards and backerboards are recognized as being building units as broadly defined by Urmston.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ known continuous processing techniques in forming a plurality of wallboard or backerboard panels with the aerated concrete units of Urmston so as to achieve the well appreciated manufacturing benefits of continuous wallboard manufacturing processes, wherein as disclosed by Mathieu, Teare, and/or Clear, continuous processes for forming wallboards include apparatuses comprising a face layer supply and a former for securing face layers to the core panels in a continuous operation while conveying the core material along a path of travel, wherein as disclosed by Teare and Clear it is known to secure the face layers to an uncured core panel and thereafter transversely cut the core panels with face layers secured thereon to form wallboards. Teare and Clear also disclose providing curing ovens to cure the wallboards after the cutting operation.

Although, the secondary references to Mathieu, Teare and Clear all suggest forming their respective wallboards by depositing slurry mixtures to the continuous process to form the core panel, it is the examiner's position that it would have been readily apparent to one of ordinary skill that the uncured concrete units of Urmston could be substituted in place of the slurry in the apparatuses of Teare, Clear, and/or Mathieu and only the expected wallboard or backerboard building units would be formed. It is further noted that Emerson (Col. 2, lines 72 – 104) is cited to suggest that is known to provide reinforcing meshes to Portland cement core panels while the panels are still in a plastic state in the formation of wallboard. That is, it is known to secure

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meshes to formed core panels in a plastic state as opposed to combining with slurry mixes.

As to claim 33, as suggested by King it is known to include reinforcing fibers (polypropylene fibers, carbon fibers or other suitable fibrous material) to the concrete mixture (King, Col. 3, lines 21 – 41).

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Urmston (US 4,124,669) in view of King (US 5,002,620), Mathieu (US 6,187,409), Teare (US 4,298,413), Clear (4,203,788) and Emerson (US 1,439,954) as applied to claim 27 above, and further in view of Pace (US 4,154,040) and/or Lawlis et al (US 4,065,333).

None of the cited art applied against claim 27 appears to suggest a bevel shaper for beveling the panels. However, as evidenced by both Pace and/or Lawlis it is known to provide bevel shapers to bevel cementitious panels to be employed as backerboards (Pace; Col 1, lines 47 – 50) and/or to be employed as wallboards (Lawlis, Col. 1, line 67 – Col. 2, line 2; Fig 1) so as to enable easier installation of the panel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a bevel shaper to bevel the core panel as means to enable easier installation as is known in the backerboard and wallboard art as evidenced by Pace and Lawlis et al.

8. Claims 34 – 37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (US 6,187,409) in view of Teare (US 4,298,413) and/or Clear (US 4,203,788).

Mathieu teaches a cementitious panel comprising a cementitious core that is fabric-reinforced by face layers secured on the respective first and second major surfaces of the core (see Figure 12). The core mix according to Mathieu may comprise a cementitious material (i.e. hydraulic cement which is able to set on hydration such as for example Portland cement) and an aggregate component selected from among mineral and/or non-mineral aggregates in particular a lightweight mineral and/or non-mineral aggregate(s). Furthermore, other agents may be added to the cementitious material including an air entraining agent that creates air bubbles within the cementitious core, which when the core is cured define open cells. This disclosure of using an air-entraining agent to form open cells is recognized as defining an aerated core. Mathieu also discloses the core mix may be applied in any desired thickness, for example of values so as to be able to obtain a panel having the standard thickness of plasterboard and positively suggests that the board formed by the panel can be employed as a tile backerboard or a wallboard (Col. 17, line 12 – Col. 18, line 62; Col. 1, lines 12 – 14).

Referring to Figures 18 to 21, Mathieu discloses an apparatus for the preparation of the panel comprising a core mix delivery system, which comprises a mixer (container 192 and agitator 193) and a dispenser (195). The core mix is dispensed adjacent to lower reinforcing mesh (100) as the lower mesh is traveled along by conveyor system (50) and a second top layer (200) of reinforcement mesh is deposited onto the core mix (both reading on applicant's face layer) (Col. 26, lines 14 – 28; Col. 29, line 25 – Col. 30, line 8). Mathieu teaches finishing the edges of the panel and then conveying the

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panel to any known curing station (e.g. a curing oven). After the curing station, Mathieu suggest transferring the panel to a cutting station where the panels are cut to size. Therein, Mathieu fails to positively suggest a cutter between the dispenser and the curing station for cutting an uncured panel into a plurality of wallboards.

However, employing cutting stations upstream curing stations is considered a well known alternative in the manufacture of cementitious panels as evidenced for example by Teare and/or Clear.

Teare discloses a method and apparatus for producing thin concrete panels suitable as a backerboard. Referring to the Figures, a lightweight concrete mix is dispensed onto a conveyor adjacent to both a carrier material 5 and a reinforcing fabric 6 (both currently recognized as reading on applicant's claimed face layer supply). The dispensed slurry strip along with reinforcing fabric layers (6 and 16) is cut by cutter (21) to form a concrete panel. Said panel is cured to form a backerboard.

Clear teaches a method for manufacturing cementitious reinforced panels wherein, as diagrammed by Figure 1, the panels are cut prior to curing.

It therefore would have been an obvious alternative to one of ordinary skill in the art at the time of the invention to employ the cutting means of Mathieu upstream of the curing means so as to cut the panel while still in an uncured state as opposed to curing and then cutting as such is a well established alternative as evidenced for example by Teare and Clear, wherein one of ordinary skill in the art would be motivated to provide the cutter upstream the curing means so as to be able to stack the cut panels thereby allowing more panels to be positioned within a curing device and cured at a given time.

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As to claims 36 and 37, Mathieu discloses that it is possible to provide wide bands on the core sides, wherein these bands can be made of polyethylene, paper, and can also be made of other impervious or semi-impervious material (Col. 22, lines 18 – 42).

As to claims 35 and 39, referring to Figures 7 - 12, the core mix (10) is formed into a generally rectangular shape defining a pair of opposing side edges and a pair of opposing end edges wherein the reinforcement fabric (applicant's at least one face layer) is secured onto the first and second major surfaces and includes longitudinal edge face bridging member 36 which extends around the opposing side edges (Col. 21, line 9 – Col. 22, line 17).

9. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (US 6,187,409) in view of Teare (US 4,298,413) and/or Clear (US 4,203,788) as applied to claim 34 above, and further in view of Pace (US 4,154,040) and/or Lawlis et al (US 4,065,333).

As to claim 38, it appears that Mathieu suggest an edge finisher, but fails to positively suggest a bevel shaper for beveling the cementitious core of the panel. However, as evidenced by both Pace and/or Lawlis it is known to bevel cementitious panels to be employed as backerboards (Pace; Col 1, lines 47 – 50) and/or to be employed as wallboards (Lawlis, Col. 1, line 67 – Col. 2, line 2; Fig 1) so as to enable easier installation of the panel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ a bevel shaper to the apparatus of

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Mathieu as means to enable easier installation as is known in the backerboard and wallboard art as evidenced by Pace and Lawlis et al.

10. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (US 6,187,409) in view of Teare (US 4,298,413) and/or Clear (US 4,203,788) as applied to claim 34 above, and further in view of King (US (US 5,002,620).

The references to Mathieu, Teare and Clear all suggest adding reinforcement meshes to the already dispensed cementitious slurry, failing to suggest a supply cooperating with the mixer for adding reinforcing fibers to the materials making the aerated concrete core. However, the primary reference to Mathieu does disclose adding additional additives to the core and King suggests that reinforcing fibers can be adding to aerated core blocks all with fibrous face layers (Col. 3, lines 21 – 41). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a supply of reinforcing fibers that adds reinforcing fibers in a cooperating manner with the mixer as adding reinforcing fibers to a cementitious core is known when forming cellular cementitious building materials as is suggested by King in combination with fibrous face layers so as to reinforce the core cementitious panel even further.

Allowable Subject Matter

11. Claims 19 – 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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As to claim 19, the prior art of record fails to teach or otherwise render obvious a system for making wallboard or backerboard that joins sheets of core material together in end-to-end relation and thereby secures a face layer to the joined-together sheets while advancing the joined-together sheets of core material along a path of travel.

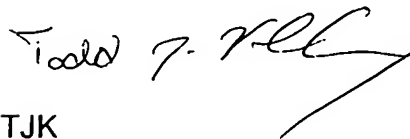
Claims 20 – 26 all depend from claim 19.

Conclusion


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Todd J. Kilkenny** whose telephone number is **(703) 305-6386**. The examiner can normally be reached on Mon - Fri (9 - 5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



TJK
December 11, 2002



Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700